

# PROCEEDINGS

OF THE

## GENERAL MEETINGS FOR SCIENTIFIC BUSINESS

OF THE

## ZOOLOGICAL SOCIETY OF LONDON.

(May to December, 1908.)

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May 12, 1908.

F. DU CANE GODMAN, Esq., D.C.L., F.R.S., Vice-President,  
in the Chair.

The Secretary read the following report on the additions made to the Society's Menagerie during the month of April 1908:—

The number of registered additions to the Society's Menagerie during the month of April was 135. Of these 75 were acquired by presentation and 15 purchased, 43 were received on deposit, and 2 were born in the Gardens.

The number of departures during the same period, by death and removals, was 145.

Among the additions special attention may be directed to:—

A hybrid between a male Lion (*Felis leo*) and a female Jaguar-Leopard (*Felis onca* × *Felis pardus*), bred in the United States; deposited on April 14th.

A Vaal Rehbok (*Pelea capreolus*) from the Drakensberg Mountains, presented by Frederick Burgoyne, Esq., F.Z.S., on April 3rd.

Two Secretary Vultures (*Serpentarius reptilivorus*) from South Africa, purchased on April 21st.

Two Australian Cassowaries (*Casuarius australis*), presented by Sir William Ingram, Bt., on April 24th.

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Mr. W. Woodland, F.Z.S., exhibited preparations of a new gland he had found in certain teleostean fishes, and made the

following remarks:—"This new gland is diffuse in form and is intermingled with the veins and arteries which subdivide to form the numerous parallel capillaries of the rete mirabile (text-fig. 79) found in connection with all teleost 'red bodies.' It is quite distinct from the gas-gland, and consists of rows of large columnar cells, situated in close connection with the venous blood-vessels, possessing large nuclei and nucleoli and packed with numerous large spherical granules derived from the red-corpuscle disintegration concerned in the generation of the oxygen found in the

Text-fig. 79.

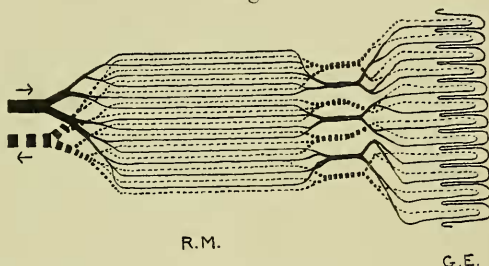
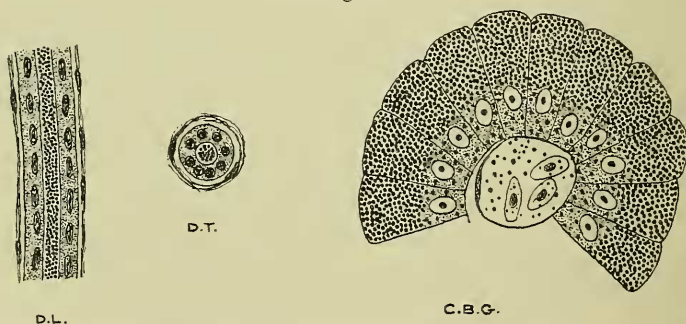


Diagram of the construction of the gas-gland rete mirabile ("red body"). R.M., rete mirabile; G.E., gas-gland epithelium. The new gland now described is situated round the veins at the proximal pole (pole remote from the glandular epithelium) of the rete mirabile.

Text-fig. 80.



C.B.G., cells of the new gland situated round and in contact with a vein; D.L., longitudinal section of a duct of the new gland containing spherical granules in its lumen derived from the gland-cells; D.T., a duct in transverse section.

swim-bladder. These granules, thus abstracted by the gland-cells from the blood, are carried away by special ducts appertaining to the gland (text-fig. 80). The discovery of this important gland in several genera—*Gobius*, *Syngnathus*, *Fierasfer*, *Box*, and others—confirms Jæger's view as to the mode of generation of the bladder oxygen. The rete mirabile of the gas-gland apparatus is

to be explained as a mechanism for bringing the toxin secreted by the gas-gland cells (Jäger) into contact with the erythrocytes *before* these reach the region of the gas epithelium, so that when the blood does reach this region, the oxygen, liberated by the action of the toxin on the erythrocytes, has become freely mixed with the plasma and is therefore in a condition to be abstracted by the gas-gland cells."

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Mr. T. A. Coward, F.Z.S., exhibited a specimen of a Petrel, *Estrelata neglecta* Schleg., the property of Mr. Arthur Newstead, of Cheshire, which had been picked up dead, yet in a quite fresh condition, at Tarporley in Cheshire, on April 1st, 1908. This bird is a native of the Southern Pacific, and has almost certainly never been recorded from the northern hemisphere, and certainly never from Europe before.

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Mr. C. Davies Sherborn, F.Z.S., exhibited a specimen of chert from the Middle Culm-measures (Carboniferous) of Christow Down, near Doddiscombe Leigh, Devonshire, showing numerous large and well-preserved Radiolaria.

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On behalf of Mr. R. Lydekker, the Secretary exhibited the tanned skin (without the legs and part of the tail) of a Wild Cat obtained by the Hon. Mason Mitchell, of the American Consular Service, in Sze-chuen, and sent by that gentleman to Mr. Rowland Ward. Compared with a light-coloured skin of *Felis temmincki* from Sikhim (B.M. No. 91.10.7.10), the Sze-chuen specimen differs by the much lighter colour of the upper parts, which are golden tawny, with a comparatively narrow dorsal streak of light rufous (in place of a broad one of mahogany rufous)—the tail being golden rufous above, different in tint from both the middle and sides. The under parts are white with a few brown spots, instead of pale buff with similar spots. The specimen is of interest as extending the range of the Bay Cat into Sze-chuen; and may be regarded as representing a local race, for which Mr. Lydekker suggested the name *F. temmincki mitchelli*. It was likewise pointed out that the Bay Cat presents striking resemblances to the African Tiger-Cat (*F. chrysothrix*, or *F. aurata*), from which it is distinguished by the broad white band between a pair of darker ones on each cheek, and a somewhat similar mark on the forehead. Sikhim and Nepal specimens exhibit both a bright rufous phase with pale and spotted under parts, and a wholly dark reddish-brown phase. A grey phase is represented by a skin (B.M. No. 0.6.30.1) from Upper Burma, presented by Mr. C. W. A. Bruce, and by the Cat from Foochow figured in plate i. of the Society's 'Proceedings' for 1898 by Dr. P. L. Sclater as a new species under the name of *F. dominicanorum*. This phase corresponds with the one of *F. chrysothrix*

to which Mr. Lydekker gave the racial name *cottoni*. Whether the name *F. temmincki dominicanorum* can be used for the Foochow-Burma Bay Cat, or whether, as in the case of *cottoni*, it refers merely to a colour-phase, remains to be proved.

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Mr. J. T. Cunningham, M.A., F.Z.S., read a paper entitled "The Heredity of Secondary Sexual Characters in Relation to Hormones, a Contribution to the Theory of Heredity." The paper contained an examination and criticism of the most important recent investigations and theories on the subject by evolutionists of various schools, namely, the theory which attributes such characters to constitutional causes such as male katabolism, Prof Karl Pearson's biometrical investigation of sexual selection in man, Castle's Mendelian theory of the heredity of sex, and Geoffrey Smith's views on dimorphism of males and parasitic castration in Crustacea. The author maintained that all these contributions were more or less inconsistent with the known facts concerning the connection between the development of secondary sexual characters and the functional activity of the primary gonads. He drew attention to the recent discovery and experimental proof on the part of physiologists that the development of the characters was due to the stimulus of a chemical substance or hormone produced by the testis or ovary, and passed into the blood, and suggested that conversely hormones from parts of the soma might affect the gametes in the gonads. In this way the hypertrophy of a part of the body due to external stimulation might modify the corresponding determinants in the gametes so as to produce some hereditary effect in succeeding generations. Mr. Cunningham added that his theory was an interpretation in terms of modern physiology of Darwin's theory of pangenesis.

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The following papers were read :—

1. The Marine Fauna of Zanzibar and British East Africa, from Collections made by Cyril Crossland, M.A., in the Years 1901 & 1902.—The Calcareous Sponges. By C. F. JENKIN \*.

[Received April 1, 1908.]

(Text-figures 81-104.)

The Collection, made by Mr. Cyril Crossland at Wasin and Zanzibar in 1901-2, passed through several hands and was finally entrusted to the writer in the autumn of 1907.

\* Communicated by Professor ARTHUR DENDY, D.Sc., F.L.S., F.Z.S.